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It is probable that at fertilization there is a nuclear but not a chromatin fusion, and that the paternal and maternal chromatin retain their identity throughout the sporophytic phase, finally fusing, in so far as they fuse at all, during synapsis. If this be true, the two important phenomena of fertilization—stimulus to growth and intermingling of ancestral characters—are widely separated, the stimulus to growth occurring when the nuclei fuse, and the mingling of characters being delayed until synapsis.—CHARLES J. CHAMBERLAIN.

Nutrition of the gymnosperm egg.—Miss STOPES and FUJII[18] have been investigating the nutritive relations of the surrounding tissues to the egg in gymnosperms. As is well known, about the "central cell," and later about the egg, there is organized usually a very distinct jacket of nutritive cells, whose inner walls are conspicuously thickened and pitted. The authors find that the delicate walls of the endosperm cells are pitted in the same way; and that the large pits of the jacket cell-walls are closed by a membrane perforated only by plasmodesmen. This latter fact is the most interesting one of the paper, for it precludes the old notion of nuclear migration or of any transfer of solid material from the jacket cells to the egg. The jacket cells are regarded as glandular, secreting substances for the digestion of the starch and proteid granules stored in the endosperm. The statement is made in the summary that the jacket cells "are considered the phylogenetic homologues of the angiospermic antipodals," a statement evidently based upon their similar function.—J. M. C.

Ecological survey of Northern Michigan.—Under the direction of C. C. ADAMS there has been published[19] the report of an ecological survey conducted by the University Museum of the University of Michigan in 1904. The regions selected were Porcupine Mountains in Ontonagon County, on the south shore of Lake Superior, and Isle Royale, an island near the Canadian shore. Especially significant is the report by A. G. RUTHVEN on the relation of the plants and animals of these regions to their environment. Lines of survey were run across the region examined, in such a way as to include examples of all the representative habitats. These habitats were then examined in as much detail as time permitted, and special attention was given to the relations of the "biota" to its environment. In this study attention was directed particularly to the forces and conditions composing the environment, in order that the dominant forces might be clearly recognized. The results are too numerous and detailed for mention, but the work is unique and extremely suggestive.—J. M. C.

Ecology of algae.—FRITSCH[20] has made a statement of some of the problems connected with the study of algal ecology, and has suggested some means towards their solution. The first problem considered is the determination of what shall constitute a formation, and the contrast with terrestrial formations is made. Suggestions are made as to the significant unit and examples are given. Chief attention, however, is given to algal periodicity, the seasonal variations of algae being much greater than those of terrestrial plants. "In most cases in an aquatic flora a number of dominant forms succeed one another in the course of a year, and after their period of prevalence is past they disappear either suddenly or gradually." Periodicity of algae is either seasonal or irregular, and the factors concerned in both of these cases are discussed. In illustration of his statements, the author discusses the algal flora of a particular pond. The paper is a distinct stimulus to the study of pond life in an effective way.—J. M. C.

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[18] STOPES, M. C. and FUJII, K., The nutritive relations of the surrounding tissues to the archegonia in gymnosperms. Beih. Bot. Centralb. **20**:1–24. *pl. 1.* 1906.

[19] An ecological survey in Northern Michigan. Prepared under the direction of CHAS. C. ADAMS. Publ. in Rep. State Geol. Survey for 1905. pp. 133. *figs. 21.* 1906.

[20] FRITSCH, F. E., Problems in aquatic biology, with special reference to the study of algal periodicity. New Phytol. **5**:149–169. 1906.

Decay of timber.—Following the lines of investigation laid down by HARTIG in his *Zersetzungserscheinungen des Holzes*, BULLER[21] has contributed a further study on the subject of the decay of timber caused by the higher fungi. The form studied is the common *Polyporus squamosus*, which is found on many species of broad-leaved trees. Like other forms of this class, the fungus gains entrance to the tree through wound surfaces. The mycelium progresses more rapidly in a longitudinal direction in the wood, so that the decayed region extends many feet up and down the trunk and principal branches, while advancing only a few inches in a radial direction. The hyphae penetrate into all the wood cells. The decaying wood is lighter in color than the sound wood. In the final stages of the decay the wood cracks into cuboidal blocks, with the intervening crevices filled with strands of the white mycelium of the fungus. The decayed wood is somewhat richer in carbon and poorer in oxygen and nitrogen than sound wood.—H. HASSELBRING.

Apogamy in Dasylirion.—WENT and BLAAUW[22] have described apogamy in *Dasylirion acrotrichum*, in the case of plants in cultivation in the Utrecht Botanical Garden. This Mexican species is dioecious, and no staminate plants exist in the garden, thus precluding the possibility of fertilization. A certain number of fruits matured sufficiently to attract attention, and an examination of the ovules discovered embryo sacs containing endosperm tissue in various stages of development, in some cases completely filling the sac. Dasylirion is thus added to the very few illustrations of endosperm-formation without fertilization. In these endosperm-containing sacs no embryos were found, but in some others a group of cells was discovered in the usual position of the egg-apparatus, which the authors seem justified, judging from the figures, in regarding as a young embryo. The position would suggest a case of parthenogenesis, but there is room for doubt, and the authors prefer to speak of it as a case of apogamy.—J. M. C.

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[21] BULLER, A. H. REGINALD, The biology of *Polyporus squamosus* Huds., a timber-destroying fungus. Jour. Econ. Biol. 1:101–138. *pls. 5–9.* 1906.

[22] WENT, F. E. F. C. and BLAAUW, A. H., A case of apogamy with *Dasylirion acrotrichum* Zucc. Recueil Trav. Bot. Néerland. no. 3. pp. 12. *pls. 5.* 1905.